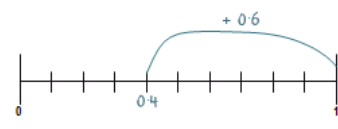
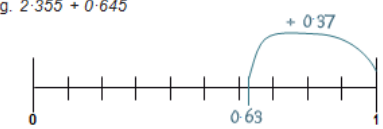


	Year 5	Year 6																																																																																																												
Mental Addition	<p>Using place value Count in 0-1s, 0-01s e.g. Know what 0.1 more than 0.51 is</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="background-color: #d9ead3;">10s</td> <td style="background-color: #d9ead3;">1s</td> <td>0-1s</td> <td>0-01s</td> </tr> <tr> <td></td> <td style="background-color: #d9ead3;">0</td> <td style="background-color: #d9ead3;">5</td> <td style="background-color: #d9ead3;">1</td> </tr> </table> <p>Partitioning e.g. $2.4 + 5.8$ as $2 + 5$ and $0.4 + 0.8$ and combine the totals: $7 + 1.2 = 8.2$</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>0:1</td><td>0:2</td><td>0:3</td><td>0:4</td><td>0:5</td><td>0:6</td><td>0:7</td><td>0:8</td><td>0:9</td><td>1</td></tr> <tr><td>1:1</td><td>1:2</td><td>1:3</td><td>1:4</td><td>1:5</td><td>1:6</td><td>1:7</td><td>1:8</td><td>1:9</td><td>2</td></tr> <tr><td>2:1</td><td>2:2</td><td>2:3</td><td>2:4</td><td>2:5</td><td>2:6</td><td>2:7</td><td>2:8</td><td>2:9</td><td>3</td></tr> <tr><td>3:1</td><td>3:2</td><td>3:3</td><td>3:4</td><td>3:5</td><td>3:6</td><td>3:7</td><td>3:8</td><td>3:9</td><td>4</td></tr> <tr><td>4:1</td><td>4:2</td><td>4:3</td><td>4:4</td><td>4:5</td><td>4:6</td><td>4:7</td><td>4:8</td><td>4:9</td><td>5</td></tr> <tr><td>5:1</td><td>5:2</td><td>5:3</td><td>5:4</td><td>5:5</td><td>5:6</td><td>5:7</td><td>5:8</td><td>5:9</td><td>6</td></tr> <tr><td>6:1</td><td>6:2</td><td>6:3</td><td>6:4</td><td>6:5</td><td>6:6</td><td>6:7</td><td>6:8</td><td>6:9</td><td>7</td></tr> <tr><td>7:1</td><td>7:2</td><td>7:3</td><td>7:4</td><td>7:5</td><td>7:6</td><td>7:7</td><td>7:8</td><td>7:9</td><td>8</td></tr> <tr><td>8:1</td><td>8:2</td><td>8:3</td><td>8:4</td><td>8:5</td><td>8:6</td><td>8:7</td><td>8:8</td><td>8:9</td><td>9</td></tr> <tr><td>9:1</td><td>9:2</td><td>9:3</td><td>9:4</td><td>9:5</td><td>9:6</td><td>9:7</td><td>9:8</td><td>9:9</td><td>10</td></tr> </table>	10s	1s	0-1s	0-01s		0	5	1	0:1	0:2	0:3	0:4	0:5	0:6	0:7	0:8	0:9	1	1:1	1:2	1:3	1:4	1:5	1:6	1:7	1:8	1:9	2	2:1	2:2	2:3	2:4	2:5	2:6	2:7	2:8	2:9	3	3:1	3:2	3:3	3:4	3:5	3:6	3:7	3:8	3:9	4	4:1	4:2	4:3	4:4	4:5	4:6	4:7	4:8	4:9	5	5:1	5:2	5:3	5:4	5:5	5:6	5:7	5:8	5:9	6	6:1	6:2	6:3	6:4	6:5	6:6	6:7	6:8	6:9	7	7:1	7:2	7:3	7:4	7:5	7:6	7:7	7:8	7:9	8	8:1	8:2	8:3	8:4	8:5	8:6	8:7	8:8	8:9	9	9:1	9:2	9:3	9:4	9:5	9:6	9:7	9:8	9:9	10	<p>Using place value Count in 0-1s, 0-01s, 0-001s e.g. Know what 0.001 more than 6.725 is</p> <p>Partitioning e.g. $9.54 + 3.23$ as $9 + 3$, $0.5 + 0.2$ and $0.04 + 0.03$, to give 12.77</p> <p>Counting on Add two decimal numbers by adding the 1s, then the 0-1s/0-01s/0-001s e.g. $6.314 + 3.006$ as $6.314 + 3$ (9.314) + $0.006 = 9.32$</p> <p>Add near multiples of 1 e.g. $6.345 + 0.999$ e.g. $5.673 + 0.9$</p> <p>Count on from large numbers e.g. $16\,375 + 12\,003$ as $28\,375 + 3$</p>
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	Year 5	Year 6
Mental Addition	<p>Counting on Add two decimal numbers by adding the 1s, then the 0-1s/0-01s e.g. $5.72 + 3.05$ as $5.72 + 3$ (8.72) + $0.05 = 8.77$</p> <p>Add near multiples of 1 e.g. $6.34 + 0.99$ e.g. $5.63 + 0.9$</p> <p>Count on from large numbers e.g. $6834 + 3005$ as $9834 + 5$</p> <p>Using number facts Number bonds to 1 and to the next whole number e.g. $5.7 + 0.3$ e.g. $0.4 + 0.6$</p>  <p>Add to the next 10 from a decimal number e.g. $7.8 + 2.2 = 10$</p>	<p>Using number facts Number bonds to 1 and to the next multiple of 1 e.g. $0.63 + 0.37$ e.g. $2.355 + 0.645$</p>  <p>Add to the next 10 e.g. $4.62 + 5.38$</p>

	Year 5	Year 6																																			
Written Addition	<p>Expanded column addition for money leading to compact column addition for adding several amounts of money e.g. $£14.64 + £28.78 + £12.26$</p> <table style="margin-left: auto; margin-right: auto;"> <tr><td>£14</td><td>60p</td><td>4p</td></tr> <tr><td>£28</td><td>70p</td><td>8p</td></tr> <tr><td>+</td><td>£12</td><td>20p</td><td>6p</td></tr> <tr><td></td><td>£1</td><td>10p</td><td></td></tr> <tr><td colspan="4"><hr/></td></tr> <tr><td>£55</td><td>60p</td><td>8p</td><td></td></tr> </table> <p>Compact column addition to add pairs of 5-digit numbers Continue to use column addition to add towers of several larger numbers Use compact addition to add decimal numbers with up to 2 decimal places e.g. $15.68 + 27.86$</p> <table style="margin-left: auto; margin-right: auto;"> <tr><td>15.68</td></tr> <tr><td>+ 27.86</td></tr> <tr><td><hr/></td></tr> <tr><td>11.1</td></tr> <tr><td><hr/></td></tr> <tr><td>43.54</td></tr> </table> <p>Add related fractions - - - e.g. $3/4 + 1/8 = 7/8$</p>	£14	60p	4p	£28	70p	8p	+	£12	20p	6p		£1	10p		<hr/>				£55	60p	8p		15.68	+ 27.86	<hr/>	11.1	<hr/>	43.54	<p>Compact column addition for adding several large numbers and decimal numbers with up to 2 decimal places Compact column addition with money e.g. $£14.64 + £28.78 + £12.26$</p> <table style="margin-left: auto; margin-right: auto;"> <tr><td>£14.64</td></tr> <tr><td>+ £28.78</td></tr> <tr><td>£12.26</td></tr> <tr><td><hr/></td></tr> <tr><td>11.1</td></tr> <tr><td><hr/></td></tr> <tr><td>£55.68</td></tr> </table> <p>Add unlike fractions, including mixed numbers - - - e.g. $1/4 + 2/3 = 11/12$ - - - e.g. $2\ 1/4 + 1\ 1/3 = 3\ 7/12$</p>	£14.64	+ £28.78	£12.26	<hr/>	11.1	<hr/>	£55.68
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	£28	70p	8p																																		
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Year 5

Year 6

Taking away

Use place value to subtract decimals
e.g. $4.58 - 0.08$
e.g. $6.26 - 0.2$

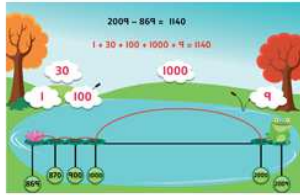
Take away multiples of powers of 10
e.g. $15\ 672 - 300$
e.g. $4\ 82 - 2$ e.g. $2.71 - 0.5$
e.g. $4\ 68 - 0.02$

Partitioning or counting back
e.g. $3964 - 1051$
e.g. $5.72 - 2.01$

Subtract near multiples of 1, 10, 100, 1000, 10 000 or £1
e.g. $86\ 456 - 9999$
e.g. $3.58 - 1.99$

Counting up

Find a difference between two numbers by counting up from the smaller to the larger
e.g. $£12.05 - £9.59$
e.g. $2009 - 869$



Taking away

Use place value to subtract decimals
e.g. $7.782 - 0.08$
e.g. $16\ 263 - 0.2$

Take away multiples of powers of 10
e.g. $132\ 956 - 400$
e.g. $686\ 109 - 40\ 000$
e.g. $7\ 823 - 0.5$

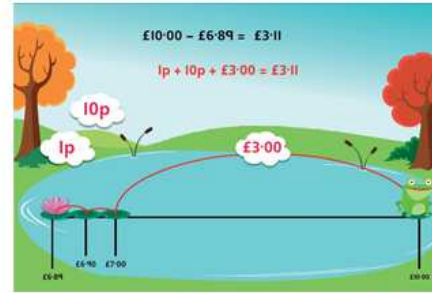
Partitioning or counting back
e.g. $3964 - 1051$
e.g. $5.72 - 2.01$

Subtract near multiples of powers of 10
e.g. $360\ 078 - 99\ 998$
e.g. $12.831 - 0.99$

Year 5

Year 6

Find change using shopkeepers' addition
e.g. Buy a toy for £6.89 using £10.00



Find a difference between two amounts of money by counting up

Using number facts

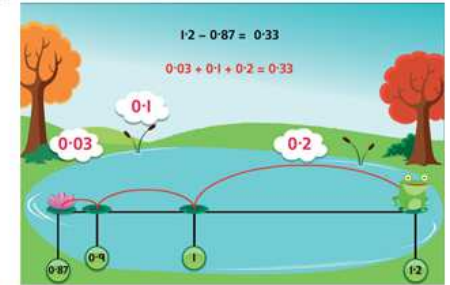
Derived facts from number bonds to 10 and 100
e.g. $2 - 0.45$ using $45 + 55 = 100$
e.g. $3 - 0.86$ using $86 + 14 = 100$



Number bonds to £1, £10 and £100

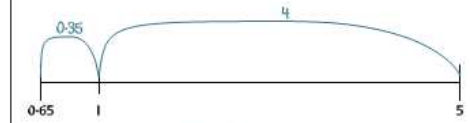
e.g. $£4.00 - £3.86$
e.g. $£100 - £66$ using $66 + 34 = 100$

Counting up
Find a difference between two decimal numbers by counting up from the smaller to the larger
e.g. $1.2 - 0.87$



Using number facts

Derived facts from number bonds to 10 and 100
e.g. $0.1 - 0.075$ using $75 + 25 = 100$
e.g. $5 - 0.65$ using $65 + 35 = 100$



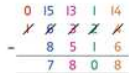
Number bonds to £1, £10 and £100

e.g. $£7.00 - £4.37$
e.g. $£100 - £66.20$ using $20p + 80p = £1$ and $£67 + £33 = £100$

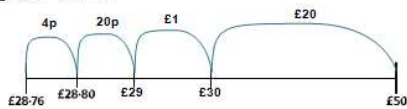
Year 5

Year 6

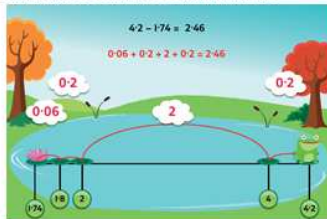
Compact column subtraction for numbers with up to 5 digits
e.g. $16\ 324 - 8516$



Continue to use counting up subtraction for subtractions involving money, including finding change
e.g. $£50 - £28.76$



Use counting up subtraction to subtract decimal numbers



e.g. $4.2 - 1.74$

Subtract related fractions

e.g. $3/4 - 1/8 = 5/8$

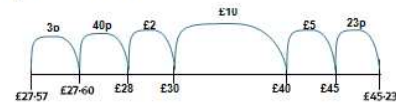
NB Counting up subtraction provides a default method for ALL children

Compact column subtraction for large numbers
e.g. $34\ 685 - 16\ 458$



Use counting up for subtractions where the larger number is a multiple or near multiple of 1000 or 10 000

Use counting up subtraction when dealing with money
e.g. $£100 - £78.56$
e.g. $£45.23 - £27.57$



Use counting up subtraction to subtract decimal numbers
e.g. $13.1 - 2.37$




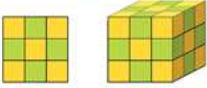
Subtract unlike fractions, including mixed numbers

e.g. $3/4 - 1/3 = 5/12$
e.g. $2\ 3/4 - 1\ 1/3 = 1\ 5/12$

NB Counting up subtraction provides a default method for ALL children

Overview of Strategies and Methods – Multiplication and Division

	Year 5	Year 6																
Mental Multiplication	<p>Doubling and halving Double amounts of money using partitioning e.g. double £6.73</p> $\begin{array}{r} \text{£}6.73 \\ \swarrow \quad \searrow \\ \text{£}12 \quad \text{£}1.46 \\ \swarrow \quad \searrow \\ \text{£}13.46 \end{array}$ <p>Use doubling and halving as a strategy in multiplying by 2, 4, 8, 5 and 20 e.g. 58×5 is half of 58×10 (580) = 290</p> <p>Grouping Multiply whole numbers and decimals by 10, 100, 1000 e.g. $3.4 \times 100 = 340$ Use partitioning to multiply 'friendly' 2- and 3-digit numbers by 1-digit numbers e.g. 402×6 as 400×6 (2400) and 2×6 (12) = 2412</p> $\begin{array}{r} \times 6 \quad \quad \times 6 \\ 402 \quad \quad 12 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ 2400 \quad \quad 12 \\ \swarrow \quad \searrow \\ 2412 \end{array}$ <p>Use partitioning to multiply decimal numbers by 1-digit numbers e.g. 4.5×3 as 4×3 (12) and 0.5×3 (1.5) = 13.5 Multiply near multiples by rounding e.g. 32×29 as $(32 \times 30) - 32 = 928$</p>	<p>Doubling and halving Double decimal numbers with up to 2 places using partitioning e.g. double 36.73</p> $\begin{array}{r} 36.73 \\ \swarrow \quad \searrow \\ 72 \quad 1.46 \\ \swarrow \quad \searrow \\ 73.46 \end{array}$ <p>Use doubling and halving as strategies in mental multiplication</p> <p>Grouping Use partitioning as a strategy in mental multiplication, as appropriate e.g. 3060×4 as 3000×4 ($12\,000$) and 60×4 (240) = 12 240 e.g. 8.4×8 as 8×8 (64) and 0.4×8 (3.2) = 67.2 Use factors in mental multiplication e.g. 421×6 as 421×3 (1263) doubled = 2526 e.g. 3.42×5 as half of $3.42 \times 10 = 17.1$ Multiply decimal numbers using near multiples by rounding e.g. 4.3×19 as $(4.3 \times 20) - 4.3 = 81.7$</p>																
	Written Multiplication	<p>Grid multiplication of numbers with up to 2 decimal places by 1-digit numbers e.g. 1.34×6</p> <table border="1"> <tr> <td>x</td> <td>1</td> <td>0.3</td> <td>0.04</td> </tr> <tr> <td>6</td> <td>6</td> <td>1.8</td> <td>0.24</td> </tr> </table> <p>= 8.04</p> <p>Multiply fractions by 1-digit numbers e.g. $\frac{3}{4} \times 6 = \frac{18}{4} = 4 \frac{2}{4} = 4 \frac{1}{2}$</p>  <p>NB Grid multiplication provides a default method for ALL children</p>	x	1	0.3	0.04	6	6	1.8	0.24	<p>Short multiplication of decimal numbers using $\times 100$ and $\div 100$ e.g. 13.72×6 as $(1372 \times 6) \div 100 = 82.32$ Short multiplication of money e.g. $\text{£}13.72 \times 6$</p> $\begin{array}{r} \text{£} 13.72 \\ \times \quad 6 \\ \hline \text{£} 82.32 \end{array}$ <p>Grid multiplication of numbers with up to 2 decimal places by 1-digit numbers e.g. 6.76×4</p> <table border="1"> <tr> <td>x</td> <td>6</td> <td>0.7</td> <td>0.06</td> </tr> <tr> <td>4</td> <td>24</td> <td>2.8</td> <td>0.24</td> </tr> </table> <p>= 27.04</p> <p>Multiply simple pairs of proper fractions e.g. $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$</p> <p>NB Grid multiplication provides a default method for ALL children</p>	x	6	0.7	0.06	4	24	2.8
x	1	0.3	0.04															
6	6	1.8	0.24															
x	6	0.7	0.06															
4	24	2.8	0.24															

	Year 5	Year 6
Mental Multiplication	<p>Using number facts Use times-tables facts up to 12×12 to multiply multiples of 10/100 of the multiplier e.g. $4 \times 6 = 24$ so $40 \times 6 = 240$ and $400 \times 6 = 2400$ Use knowledge of factors and multiples in multiplication e.g. 43×6 is double 43×3 e.g. 28×50 is half of 28×100 (2800) = 1400 Know square numbers and cube numbers</p> 	<p>Using number facts Use times-tables facts up to 12×12 in mental multiplication of large numbers or numbers with up to 2 decimal places e.g. $6 \times 4 = 24$ and $0.06 \times 4 = 0.24$</p>
	Written Multiplication	<p>Short multiplication of 2-, 3- and 4-digit numbers by 1-digit numbers e.g. 435×8</p> $\begin{array}{r} 435 \\ \times 8 \\ \hline 3480 \end{array}$ <p>Long multiplication of 2-, 3- and 4-digit numbers by 'teen' numbers e.g. 48×16</p> $\begin{array}{r} 48 \\ \times 16 \\ \hline 288 \\ 480 \\ \hline 768 \end{array}$

	Year 5	Year 6
Mental Division	<p>Doubling and halving Halve amounts of money using partitioning e.g. half of £14.84 is half of £14 (£7) plus half of 84p (42p)</p> <div style="text-align: center;"> </div> <p>Use doubling and halving as a strategy in dividing by 2, 4, 8, 5 and 20 e.g. $115 \div 5$ as double $115 (230) \div 10 = 23$</p> <p>Grouping Divide numbers by 10, 100, 1000 to obtain decimal answers with up to 3 decimal places e.g. $340 \div 100 = 3.4$ Use the 10th, 20th, 30th ... multiple of the divisor to divide 'friendly' 2- and 3-digit numbers by 1-digit numbers e.g. $186 \div 6$ as $30 \times 6 (180)$ and $1 \times 6 (6)$</p> <div style="text-align: center;"> $\begin{array}{r} 186 \div 6 = \square \\ \square \times 6 = 186 \quad 186 \div 6 = 31 \\ \underline{30 \times 6 = 180} \\ 6 \\ \underline{1 \times 6 = 6} \\ 0 \\ 31 \end{array}$ </div>	<p>Doubling and halving Halve decimal numbers with up to 2 places using partitioning e.g. half of 36.86 is half of 36 (18) plus half of 0.86 (0.43)</p> <div style="text-align: center;"> </div> <p>Use doubling and halving as strategies in mental division</p> <p>Grouping Use the 10th, 20th, 30th, ... or 100th, 200th, 300th ... multiples of the divisor to divide large numbers e.g. $378 \div 9$ as $40 \times 9 (360)$ and $2 \times 9 (18)$, remainder 2</p> <div style="text-align: center;"> $378 \div 9 = \square$ $\begin{array}{r} \square \times 9 = 378 \\ \underline{40 \times 9 = 360} \\ 18 \\ \underline{2 \times 9 = 18} \\ 0 \\ 42 \end{array} \quad 378 \div 9 = 42 \text{ r}2$ </div> <p>Use tests for divisibility e.g. 135 divides by 3, as $1 + 3 + 5 = 9$ and 9 is in the $\times 3$ table</p>

	Year 5	Year 6
Mental Division	<p>Using number facts Use division facts from the times-tables up to 12×12 to divide multiples of powers of 10 of the divisor e.g. $3600 \div 9$ using $36 \div 9$ Know square numbers and cube numbers</p> <div style="text-align: center;"> </div>	<p>Using number facts Use division facts from the times-tables up to 12×12 to divide decimal numbers by 1-digit numbers e.g. $1.17 \div 3$ is $1/100$ of $117 \div 3 (39)$ Know tests of divisibility for numbers divisible by 2, 3, 4, 5, 9, 10 and 25</p>
	<p>Written Division Use a written version of a mental strategy to divide 3-digit numbers by 1-digit numbers e.g. $326 \div 6$ as $50 \times 6 (300)$ and $4 \times 6 (24)$, remainder 2</p> <div style="text-align: center;"> $326 \div 6 = \square$ $\begin{array}{r} \square \times 6 = 326 \\ \underline{50 \times 6 = 300} \\ 26 \\ \underline{4 \times 6 = 24} \\ 2 \\ 54 \end{array} \quad 326 \div 6 = 54 \text{ r}2$ </div>	<p>Written Division Short division of 3- and 4-digit numbers by 1-digit numbers e.g. $139 \div 3$</p> <div style="text-align: center;"> $3 \overline{) 139} \begin{array}{l} 46 \text{ r}1 \\ \underline{12} \\ 19 \\ \underline{18} \\ 1 \end{array}$ </div> <p>Long division of 3- and 4-digit numbers by 2-digit numbers e.g. $4176 \div 13$</p> <div style="text-align: center;"> $\begin{array}{r} 300 + 20 + 1, \text{ r}3 \\ 13 \overline{) 4176} \\ \underline{-3900} \\ 276 \\ \underline{-260} \\ 16 \\ \underline{-13} \\ 3 \end{array} \quad 4176 \div 13 = 321 \text{ r}3$ </div>

	Year 5	Year 6
Written Division	<p>Short division of 3- and 4-digit numbers by 1-digit numbers e.g. $139 \div 3$</p> <div style="text-align: center;"> $3 \overline{) 139} \begin{array}{l} 46 \text{ r}1 \\ \underline{12} \\ 19 \\ \underline{18} \\ 1 \end{array}$ </div> <p>Give remainders as whole numbers or as fractions Find unit and non-unit fractions of large amounts - e.g. $3/5$ of 265 is $3 \times (265 \div 5) = 159$ Turn improper fractions into mixed numbers and vice versa</p>	<p>Give remainders as whole numbers, fractions or decimals Use place value to divide 1- and 2-place decimals by numbers ≤ 12 e.g. $3.65 \div 5$ as $(365 \div 5) \div 100 = 0.73$ Divide proper fractions by whole numbers</p>